

Pinedale Anticline Project Office (PAPO)

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- **The PAPO was established to**
 - Obtain, collect, store, & distribute monitoring information to support adaptive management & analyze mitigation projects in support of implementation of the ROD
 - Provide oversight of monitoring & mitigation activities discussed in the ROD
 - Implement or oversee mitigation & monitoring projects utilizing the Monitoring & Mitigation Fund (USDI, BLM, State of Wyoming, Memorandum of Agreement)



- **PAPO Primary Duties**

- Inspect, monitor, & verify compliance on surface reclamation
- Assure habitat reclamation
- Validate, coordinate, & oversee monitoring
- Provide information regarding impacts, monitoring data, & mitigation success to the respective agencies & the public (USDI, BLM, State of Wyoming, Memorandum of Agreement)



- **Organization/Membership**
 - Full-time employees/contractors
 - BLM, WDA, WGFD, and WDEQ
 - Oversight provided by Board of Directors
 - Agency Directors
 - County Commissioner
 - Office management and coordination provided by a BLM Project Coordinator



- **Roles & Responsibilities Reclamation**
 - Evaluate annual monitoring reports
 - Support or Refute findings of reclamation assessments
 - Recommend Adaptive Management
 - Coordinate w/BLM
 - Monitor 5% of reclamation annually
 - Maintain monitoring database
 - Provide data submission protocols (2009, PAPA Monitoring for Reclamation Success)



RECORD OF DECISION
Final Supplemental Environmental Impact
Statement for the Pinedale Anticline Oil and Gas
Exploration and Development Project
Sublette County, Wyoming

BLM

Pinedale Field Office



September 2008

Appendices A & C

- Operators are responsible for satisfactory & timely reclamation of the land surface disturbed by their operations (C-1, paragraph 1)
- Reclamation standards established in “The Gold Book,” & specific criteria identified in the ROD (C-1, paragraph 2)
- Three types of Reclamation
 - Site Stabilization
 - Interim
 - Full Site Final



- **Site Stabilization** (A-10, A.7)
 - Not actively drilling, but plan to reoccupy within 2 years (C-1, paragraph 2)
- **Interim Reclamation**
 - Locations where surface disturbing activities are not anticipated for the next 2 plus years, can include locations where all development is complete for the production phase of the pad (C-1, paragraph 2)
- **Full Site Final Reclamation** (C-1, C.1)
 - The production phase is complete, & all infrastructure have been removed. Applies to well pads, & the associated ROWs, etc.



- **Site Stabilization** (A-10, A.7, 1 - 3)
 - 75% protective cover
 - Organic mulch, herbaceous vegetation, jute matting, or other
 - Modify all existing pads to approach zero sediment discharge
 - Same standards for access roads



- **Interim Reclamation Objective**
 - Achieve healthy, biologically active topsoil
 - Control erosion
 - Restore habitat, visual, & forage function (C-1, C.1, paragraph 1)



- **Interim Reclamation Considered Successful**
 - Areas not needed for long-term production operations/vehicle travel are:
 - Recontoured
 - Protected from erosion
 - Revegetated with a plant community that
 - Self-sustaining
 - Vigorous
 - Diverse (C-1, C.1, paragraph 2)



- **Interim Reclamation Vegetative Criteria**
 - Native Forbs
 - **Frequency** a minimum of 75%
 - Diversity \geq the reference site
 - Native Shrubs
 - **Frequency** a minimum of 50% (shrubs & half shrubs)
 - At least 15% of the **frequency** must be the dominant species
 - Diversity must be \geq the reference site (C-3, C.4.1, 1 – 2)



- **Interim Reclamation Vegetative Criteria cont.**
 - Native Grasses
 - Minimum of 3 native perennial species, 2 must be bunch grasses
 - Achieve abundance & diversity similar to the reference site
 - Non-Native Weeds
 - Absent of noxious weeds (federal, state, & county)
 - Other undesirables treated (e.g., cheatgrass)
 - Plant Vigor (C-3, C.4, C.4.1, 3 – 5)



- **Full Site Final Reclamation Objective**
 - Achieve habitat, forage, & hydrologic functions
 - Restoration of the landform
 - Restore:
 - Natural vegetative community
 - Hydrologic systems
 - Visual resources
 - Agricultural values
 - Wildlife habitats (C-1, C.1, paragraph 3)



- **Full Site Final Reclamation Considered Successful**
 - Landform is restored
 - Self-sustaining, vigorous, diverse, plant community with **frequency** to control erosion, non-native plants, & reestablish wildlife habitat & forage production
 - Productivity \geq to pre-disturbance
 - Resilient plants (influences removed \geq 1 year)
 - Well established shrubs
 - Agricultural systems reestablished
 - Natural water flow patterns (i.e., erosion control)
 - Free of noxious or invasive species, etc. (C-1, C.1, paragraph 6)



- **Full Site Final Reclamation Vegetative Criteria**
 - Ground Cover & Ecological Function
 - Ground cover \geq the reference site
 - Vegetative litter decomposing into the soil
 - Native Forbs
 - **Frequency** \geq the reference site
 - Diversity \geq the reference site within 8 years
 - Native Shrubs
 - **Frequency** \geq 80% of the reference site
 - \geq 25% frequency must be the dominant species
 - Diversity \geq the reference site (C-3 & 4, C.4.2, 1 – 2, a - b)



- **Full Site Final Reclamation Vegetative Criteria
cont.**

- Native Grasses

- Production \geq reference site
- ≥ 3 native perennial species, 2 must be bunch grasses

- Non-native Weeds

- Absent of noxious weeds (federal, state, & county)
- Other undesirables treated (e.g., cheatgrass)

- Plant Vigor (C-4, C.4.2, 2., c – e)



- **Adaptive Management, 2010**
 - Operators will provide Annual Reclamation Monitoring Report (PAPO)
 - Status of all locations through qualitative &/or quantitative assessments per the *Pinedale Anticline Project Area Monitoring for Reclamation Success* document



- **Adaptive Management, 2010 cont.**
 - Annual Reclamation Monitoring Report Summary (BLM)
 - Type of reclamation (e.g., interim)
 - Proposed reclamation in the upcoming planning year (including site stabilization)
 - Pads identified for future development that may be in interim reclamation
 - Trends &/or issues w/reclamation &/or issues with reclamation or the monitoring plan ...



2011 Accomplishments



Field Monitoring Coordination with Operators

QEP

- Stewart Point 7-28 seeding
- Mesa 11-20

QEP field Services

- Enhanced seed trial on ROW

SWEPI

- Antelope locations

ULTRA

- DA-2



Field Monitoring Coordination with BLM

- Seeds for Success assistance
- BLM staff assistance
- Supervisory NRS field tour
- Managers field tour
- BLM enforcement

- **PAPO Quantitative & Qualitative Monitoring**
 - Quantitatively monitored 11 well-pads
 - Qualitatively monitored
 - 19 forms completed
 - > 100 locations visited
 - ROWs & Reference locations were not monitored

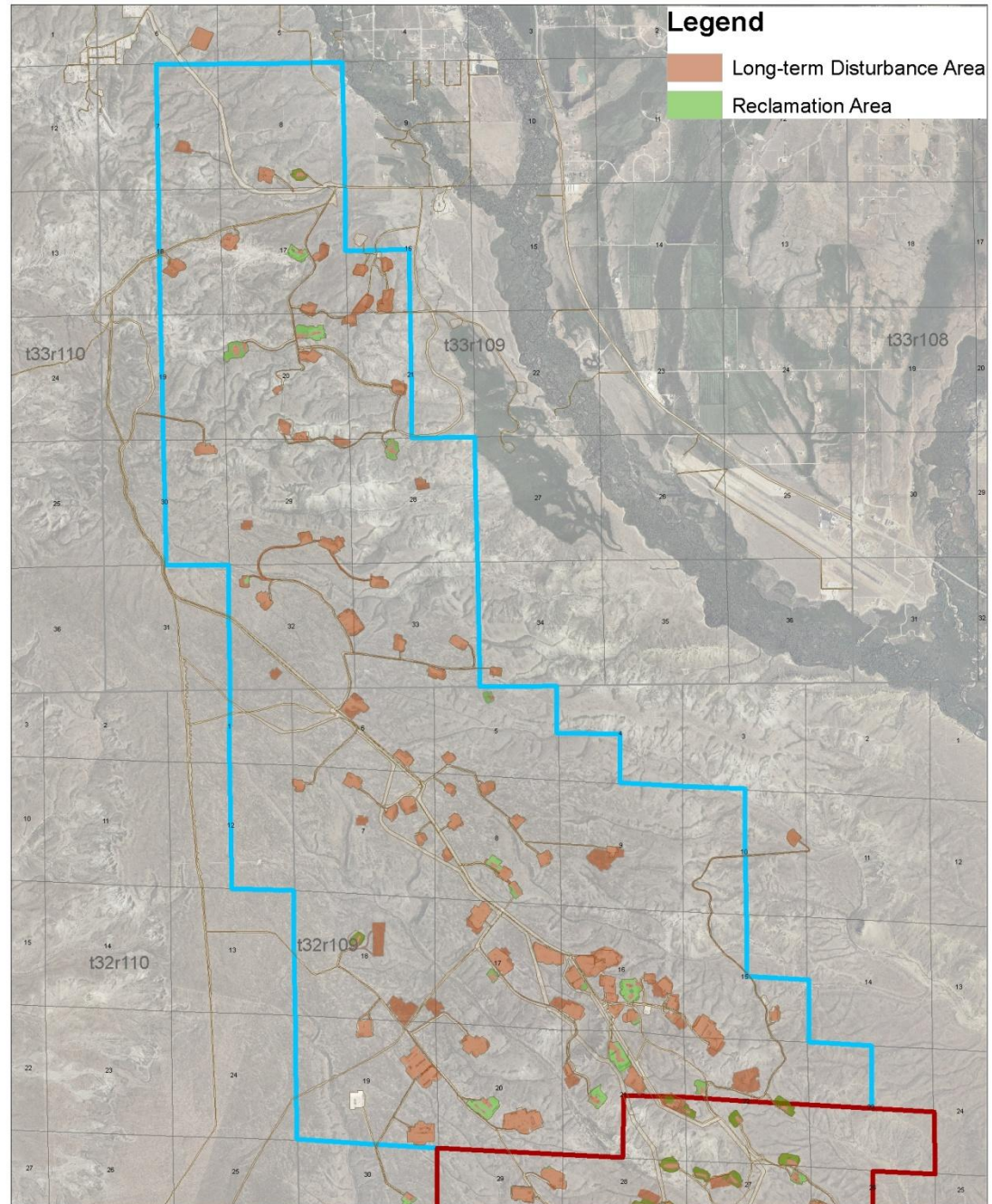


- **PAPO Quantitative & Qualitative Monitoring cont.**
 - 34 locations appeared to be moving toward reclamation objectives
 - 30 locations appeared not to be moving toward reclamation objectives
 - According to data submitted by the operators & our monitoring observations, we found 48 locations to have no reclamation initiated
 - Being developed
 - Dirt work



DA 1 SP General Observations

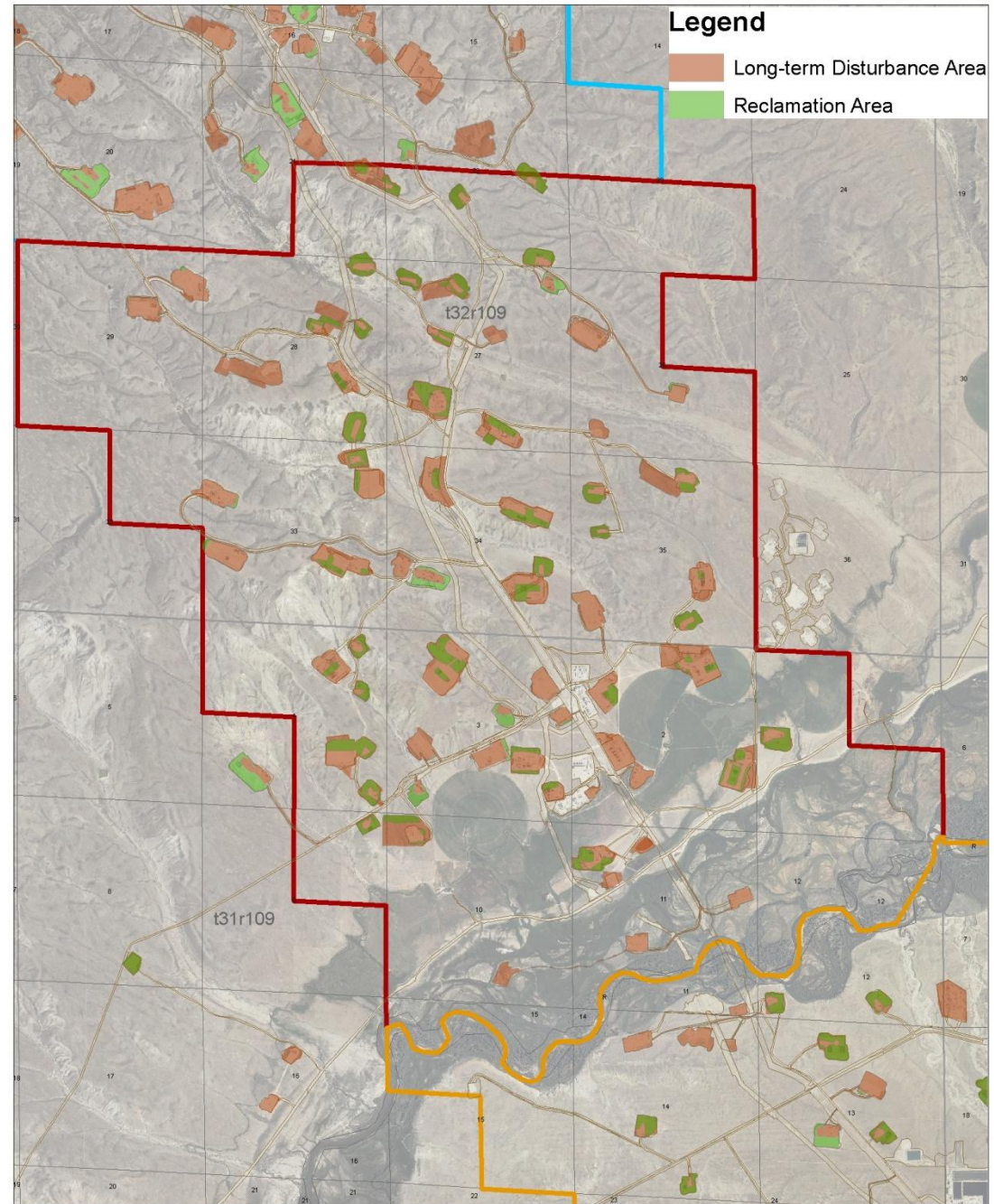
Development Area 1



DA 2

General Observations

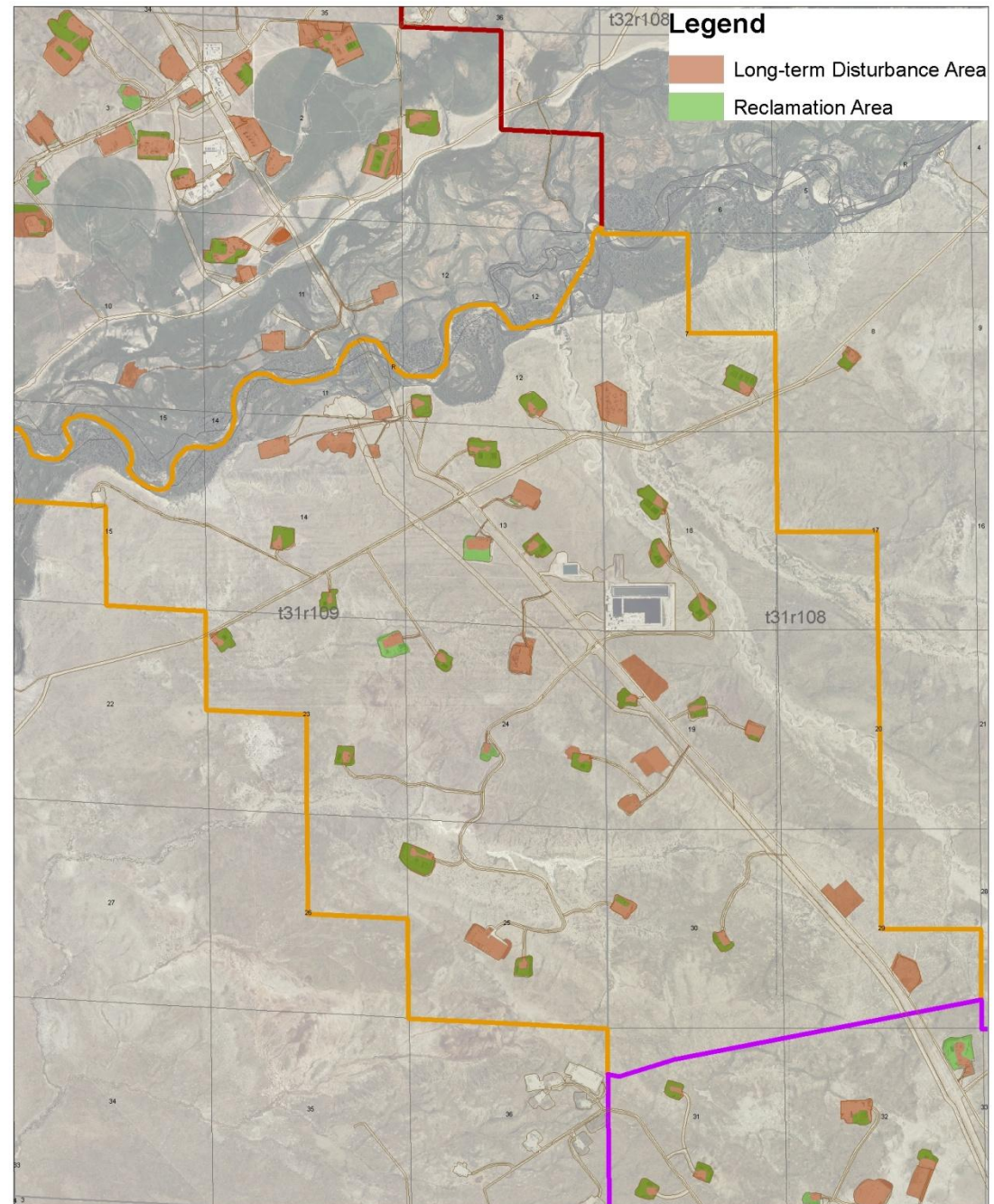
Development Area 2



DA 3

General Observations

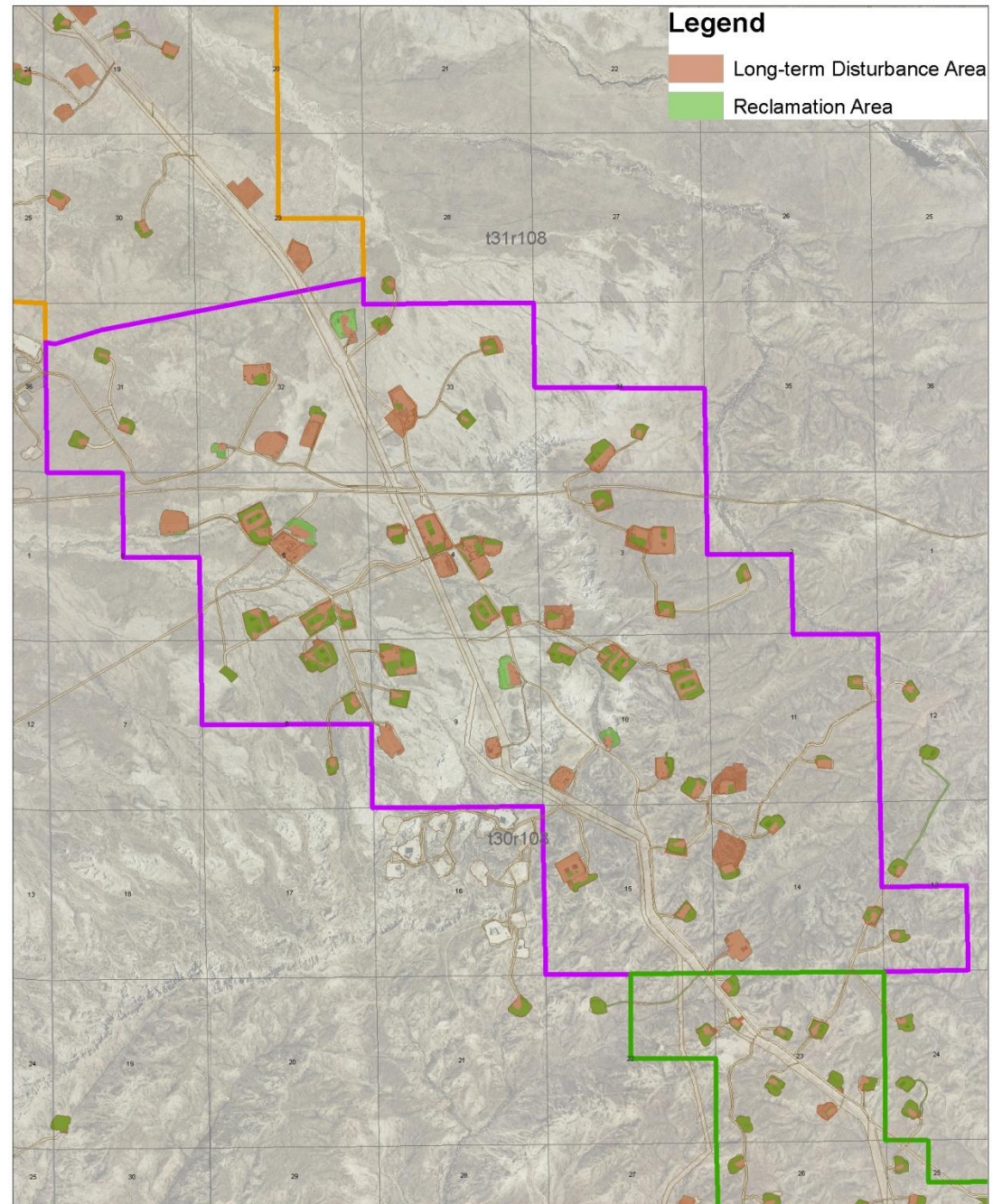
Development Area 3



DA 4

General Observations

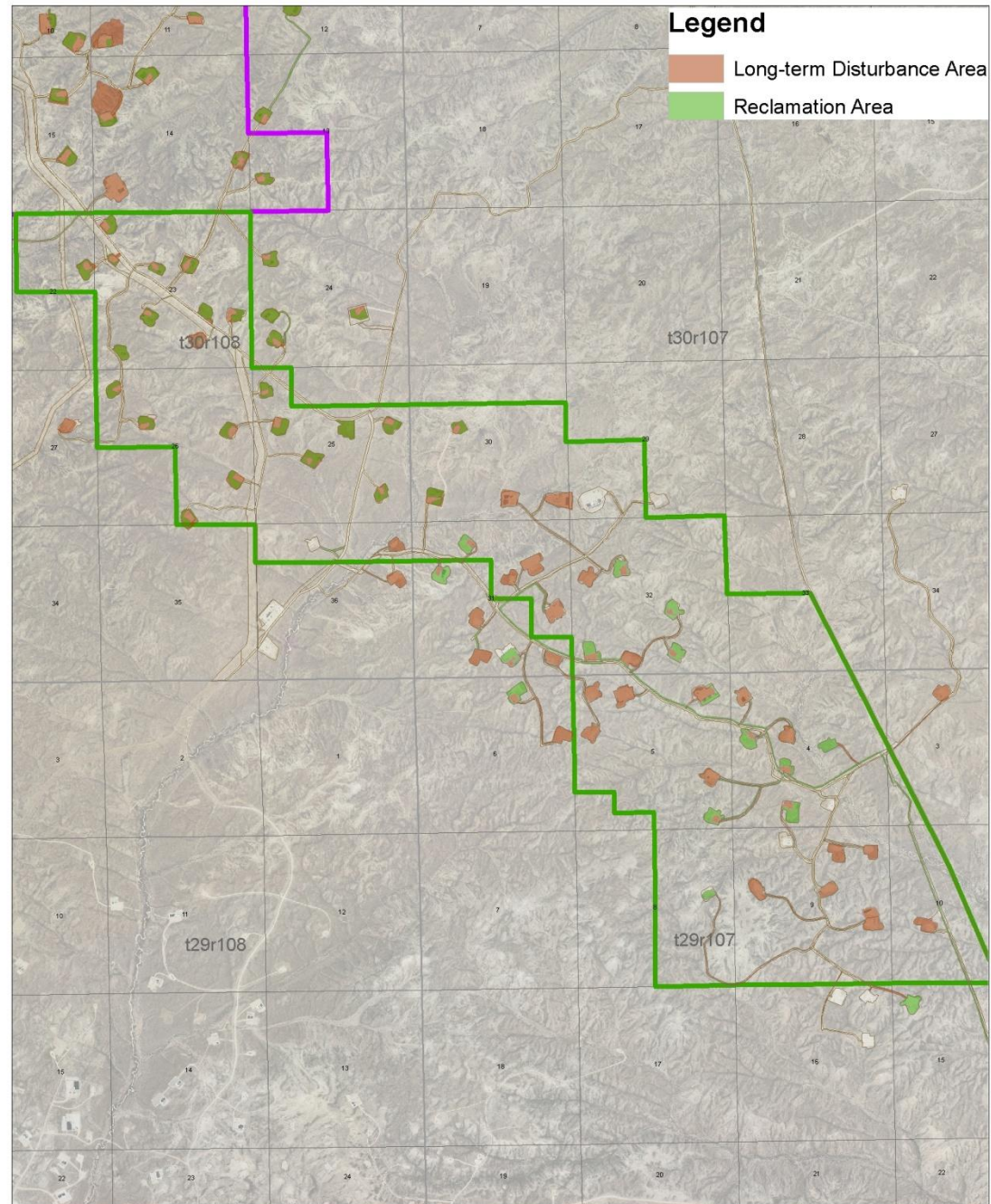
Development Area 4



DA 5

General Observations

Development Area 5



Concerns, Challenges, & Affirmations







Affirmations

- Pads brought in with maximum area in reclamation
- Fences removed
- Custom seed mixes to match ESD
- Pad design at APD level



Key Hole Design



Minimize Disturbance Design



Minimize Disturbance Design



Pinedale Anticline Data Management System (PADMS)



- October & November Workshops
- December 2011 – Theresa Nallick
- Prioritized 2011 data
 - Teamwork among all & a special ‘thanks’ to all
- QA/QC
 - ‘Ownership’
 - Acres disturbed/in reclamation
 - Status
 - Calculations



Welcome to PADMS - Windows Internet Explorer





https://my.usgs.gov/papo/

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BLM Wyoming Online State of Wyoming Mail - Inbox Welcome to PADMS Wyoming NRCS ECS Home | ...

square feet per acre

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Home Reporting Configuration BLM

Search Locations

Welcome to The Pinedale Anticline Data Management System

Refresh Map

Operator:

All Operators

Type:

All Types

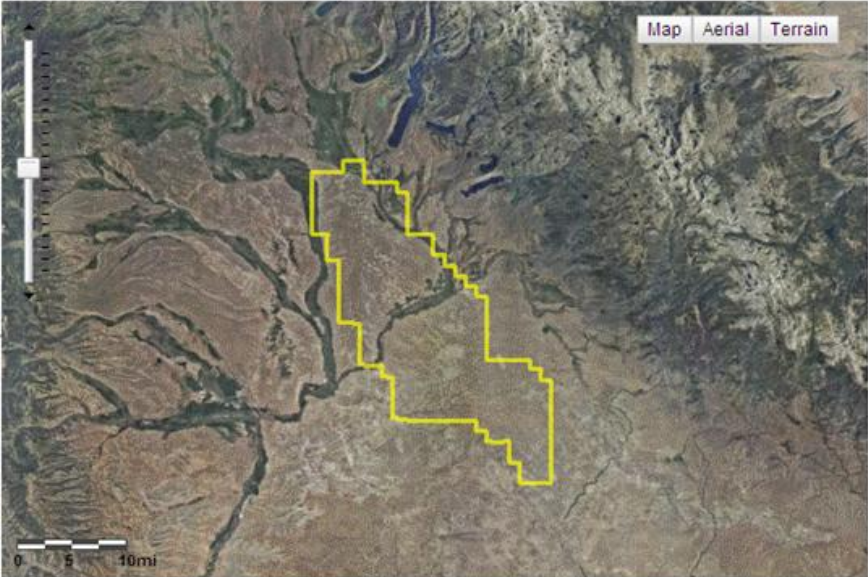
☐ Show Disturbances

☐ Show Reclamation Areas

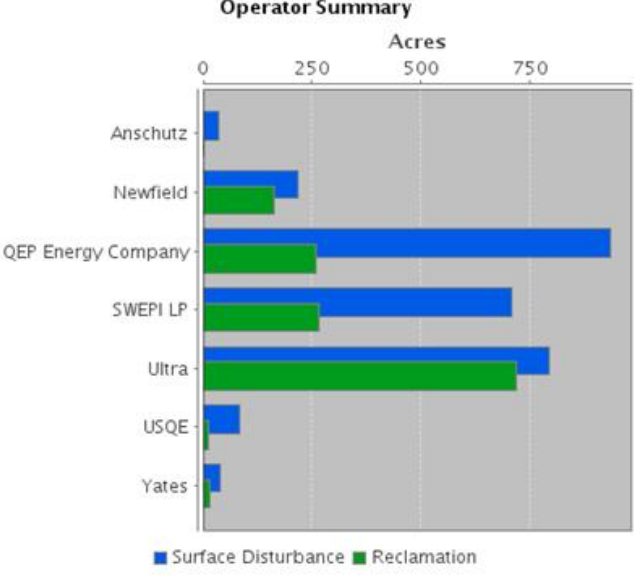
☐ Show Reference Points

☐ Auto-Zoom to Selection

Printable Map



Operator Summary



Operator	Surface Disturbance (Acres)	Reclamation (Acres)
Anschutz	~20	~10
Newfield	~200	~150
QEP Energy Company	~800	~250
SWEPI LP	~650	~250
Ultra	~750	~650
USQE	~100	~10
Yates	~50	~10

Reports, Downloads & Interactive Maps:

Frequently used reports:

- Presence of Noxious Weeds
- Presence of Undesirable Species
- Seeding Method Used
- Ad-Hoc
- All Data

Operators:

- Anschutz
- Newfield
- QEP Energy Company
- SWEPI LP
- Ultra
- USQE
- Yates

Done Local intranet 100%

Operator: Newfield - Windows Internet Explorer

https://my.usgs.gov/papo/operator/show/2

square feet per acre

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Page Tools

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Home Reporting Configuration BLM New Location Upload Spatial Reports Upload Photographs Upload Status Reports

Search Locations

Operator Summary Page: Newfield

Map Aerial Terrain

0 1 2mi

Map Controls:

Type: All Types

Show Disturbances

Show Reclamation Areas

Show Reference Points

Auto-Zoom to Selection

Refresh Map

Operator Summary:

	Locns.	Dist. Acres	Recl. Acres
!	22	28.49	1.84
!	0	0.00	0.00
!	22	181.54	154.79
!	1	6.06	6.06
!	0	0.00	0.00
✓	0	0.00	0.00
Total	45	216.09	162.69

Downloads:

ESRI Shapefile (.shp)

Microsoft Excel (.xls)

Adobe Acrobat (.pdf)

Location Summary Table:

Listing: All

Name	Type	Coordinates	Dist. Acres	Recl. Acres	Last Seeding	Seed Mix	Last Spatial	Last Qual.	Last Frequency	Last Intercept	Last Photo	Status
Antelope 15-23	Well Pad	42.462289/-109.565425	4.61	3.89	09/08/2005	Sagebrush-dominated w/ Sandy Soils	07/09/2011	10/20/2011	10/20/2011	10/20/2011	07/09/2011	! Interim Reclamation In
Antelope 15-23_ref	Reference Point	42.462000/-109.565000							10/20/2011	10/21/2011		

Rec. not initiated

Site Stabilized

Interim Rec. Initiated

Interim Rec. Full-development

Interim Rec. Achieved

Final Rec. Achieved

Location: Antelope_15-23_ref - Status Reports - Windows Internet Explorer
https://my.usgs.gov/papo/pad/status/56620?sample.id=104683

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BLM Wyoming Online State of Wyoming Mail - Inbox Location: Antelope_15-23_ref

Location Entry Page: Antelope_15-23_ref (Newfield)

Navigation:

- Summary
- Status Reports
- Photographs
- Antelope_15-23
- Antelope_15-23_ref
- Antelope_15-23_Road
- Antelope_16-5
- Antelope_16-5_ref

Downloads:

- Microsoft Excel

Status Reports:

Date Collected	Type	
10/21/2011	Intercept	
10/20/2011	Frequency	

Selected Status Report:

Collection Date: 10/21/2011
Observer: Leslie Meyer
Recorder: Leslie Meyer
Data Source: CSR-inc.
Transect Number: T2
Direction: 332
Notes:

Point	Top Canopy	Lower Canopy1	Lower Canopy2	Lower Canopy3	Soil Surface
1	NONE				S
2	NONE				S
3	NONE				S
4	NONE				S
5	NONE				S
6	NONE				S
7	POSE				S
8	NONE				S
9	NONE				S
10	NONE				S
11	NONE				S
12	NONE				S
13	ARTRW8	POSE			D
14	NONE				S
15	NONE				S
16	NONE				S
17	NONE				S

Location: Antelope_15-23_ref - Status Reports - Windows Internet Explorer
https://my.usgs.gov/papo/pad/status/56620?sample.id=104683

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Start Location: Ant... Microsoft Excel... BLM Wyoming Online State of Wyoming Mail - Inbox Location: Antelope_15-23_ref

77	NONE				S
78	NONE				S
79	NONE				S
80	ARTRW8				PHHOG
81	NONE				S
82	NONE				S
83	POSE				D
84	NONE				S
85	NONE				S
86	NONE				S
87	NONE				S
88	NONE				S
89	ARTRW8				D
90	NONE				S
91	NONE				S
92	NONE				S
93	POSE				S
94	NONE				S
95	NONE				S
96	NONE				S
97	NONE				S
98	NONE				S
99	NONE				S
100	NONE				S

Total # Perennial Grasses/Total # Perennial Bunch Grasses: 8/8
Total # Forbs: 2
Total # Shrubs: 13
Percent Canopy Cover: 19
Percent Bare Ground: 81
Percent Basal Cover: 2

BLM Wyoming | Wyoming Department of Agriculture | Wyoming Department of Environmental Quality | Wyoming Game & Fish | Feedback

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Done Start Location: Ant... Microsoft Excel... W 2012_CornerP... Inbox - wkelle... AnnualPlanning... DVD-RAM Drive... AnnualMeetings 2012 Annual Pl... 022012PAPO_... 100% 12:08 PM



PAPO Proposed Adaptive Management

- December 2011
- January 2012
 - Eric Decker, BLM JIO/PAPO
 - Sherm Karl, BLM NOC
 - Kellie Roadifer, BLM PFO
 - Jim Jacobs, USDA NRCS Bridger Plant Materials
 - Windy Kelley, WDA JIO/PAPO



- Adaptive Management
- 2008 SEIS ROD
 - Appendix C – remove ‘density or’
- Pinedale Anticline Project Area Monitoring for Reclamation Success Manual
 - Reorganize
 - Monitoring methodologies
 - Incorporate PADMS





QUESTIONS AND
COMMENTS?